

**Kindness:** *Constant kindness can accomplish much. As the sun makes ice melt, kindness causes misunderstanding, mistrust, and hostility to evaporate.* —Albert Schweitzer, French philosopher, physician, and musician

# Palau Compact Road Will Transform Island Nation

*Story and photos by Dave Kern, Project Manager*

**T**he Palau Compact Road, a 53-mile-long highway through virgin territory on a new island nation in the western Pacific Ocean, is HED's most challenging project.

In 1994, the U.S. Department of the Interior, under the Compact of Free Association (Compact) with the then newly independent Republic of Palau (ROP), provided that the road be built on the ROP's Babeldaob island. DOI asked the Corps of Engineers to be its technical representative because of the Corps' reputation for handling large, complex projects in a timely and cost effective manner. The Honolulu Engineer District enthusiastically took on the task.

The Republic of Palau is the westernmost geographical area in Micronesia, less than 500 miles east of the Philippines and about 4,600 miles from Hawaii. Its capital is Koror. The country is very near the equator and consists of several hundred volcanic islands and a few coral atolls but only eight inhabited islands. The population is approximately 18,000 people with a land area of 188 square miles.

The island of Babeldaob, with an area of 133 square miles, is the second largest island in Micronesia. Palau's main economic strengths are in its marine resources. It is recognized as one of the best scuba-diving locations in the world, with its Rock Islands a world renowned tourist destination.

Like many of the emerging Pacific Island nations, Palau has a history of foreign occupation. Western contact first took place in 1783 when the vessel of explorer Captain Henry Wilson of England was shipwrecked near the islands. The British dominated trade with Palau until 1885. Spain claimed control until 1899 when they sold it, along with the rest of the Caroline and Northern Mariana Islands, to Germany following Spain's defeat in the Spanish-American War.

During the German administration of the island from 1899 to 1914, Palau's economic potential was increased by the introduction of coconut planting and phosphate mining. The Germans also introduced widespread sanitary measures to combat epidemics of influenza and dysentery. Those two diseases caused the population of Palau to fall from 40,000 to 4,000 in approximately 120 years.

Japanese forces occupied Palau in 1914. The League of Na-

tions recognized Japan as the mandatory power in a territory which included the Northern Mariana Islands, the Marshall Islands, Yap, Truk, Ponape and Kosrae as well as Palau. The Japanese increased efforts in mining, agriculture, and commercial fishing.

Palau became a closed military area in 1938. Fighting during World War II took place throughout Palau, principally in Peleliu,



*The terrain is one of the factors that makes construction of the Palau Compact Road challenging.*

Angaur, and Koror. In 1947, the United Nations created the Trust Territory of the Pacific Islands (TTPI) and named the United States as the TTPI's administering authority. Palau was the last TTPI district.

On October 1, 1994, the Compact of Free Association between the United States and Palau entered into force. Under the Compact, the status of free association recognizes Palau as a sovereign state with the capacity to conduct foreign affairs. The Compact places full responsibility for Palau's defense with the United States. The Compact also provides grant funds and federal program assistance, principally through the DOI.

The Compact requires that the U.S. build a 53-mile road on the undeveloped island of Babeldaob to foster ROP's economic development. Some numbers make it plain how the road will enhance the ROP's economy: the tiny island of Koror, the capital of Palau, has only 4 percent of the country's landmass, but 70 percent of the country's population. An encircling road on Babeldaob, which has 70 percent of ROP's landmass, will open many opportunities to the

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**Vision:** *The great thing in the world is not so much where we stand, as in what direction we are moving.*—Oliver Wendell Holmes

## Palau

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citizens of Palau. The new road will also provide excellent access to the new capital site at Melekeok, now under construction about halfway up the east coast of Babeldaob. The capital would not have been relocated without the Palau Compact Road.

In agreements between the United States government and the ROP, the project budget was established at \$149 million for a 24-foot wide, paved road. Although the DOI has overall responsibility for the project, HED did the planning and design, and manages construction of the road.

In the planning and design phases of the project, HED employed Wil Chee Planning, a Hawaii-based environmental resources firm, to write the project's environmental impact statement. The District also hired International Archaeological Research Institute to handle historic preservation compliance, and four architect-engineer companies and several specialized sub-contractor designers to do the topographic surveys and all design work. Professional facilitators conducted formal partnering between the U.S. and ROP, during the design phase, and between HED and the construction contractor. All told, more than 35 firms, including the prime construction contractor Daewoo Engineering and Construction Company, are part of the effort to design and build this road.

The ROP hurdled a major obstacle by securing permissions to enter all properties connected with the project, which was their obligation under the terms of the Compact. The acquisition of Rights-of-Entry (ROE) was expected to be a difficult task for several reasons: (1) the Palauan culture opposes the taking of private land by the government; (2) some of the private land ownership is in question because the land was under Japanese land rules during Japanese occupation; and (3) some of the private land parcels are under traditional ownership, e.g. a clan, a family or several families, or several individuals, requiring that all parties must agree with the ROE. The most significant means by which the ROP acquired the ROEs was to site the road alignment so that a large proportion (about 93 percent) of the corridor would be in public ownership. This in turn minimized the number of parties with which the ROP



*A traditional hut and bamboo raft on the Tabecheding River, a tributary to Palau's Ngeremeduu Bay.*

had to negotiate to acquire the ROEs. The land acquisition effort was successful and all land rights were secured prior to construction.

Design of the road is complete. The major features of the road include pavements, roadside and cross drainage, bridges, shoulders, guardrails, pavement markings, signage, and intersections. Earth-filled causeways and bridges were designed to span two bays. The construction contract was awarded on March 30, 1999 to Daewoo Corporation of Seoul, Korea for \$88.6 million. Notice to Proceed was acknowledged on Nov. 1, 1999. Construction activities are currently underway. Almost \$40 million has been spent thus far on road planning, design and construction. Some numbers related to construction that convey the size of the project: placement of about 3.5 million cubic meters of fill, construction of more than 300 drainage structures, the use of more than 600 pieces of equipment, and the employment of more than 500 workers.

The Compact requires mitigation to compensate for the unavoidable adverse environmental impacts of the project. After months of work and negotiations, the U.S. and ROP agreed that Palau would establish two conservation areas, set aside in perpetuity, for mitigation use. The larger of the two conservation zones encompasses Ngeremeduu Bay, the largest estuary in Micronesia. This area, including the bay and its major tributary streams, barrier reef, and lagoon, totals 28,000 acres.

The Corps entered into a federal interagency agreement with the Environmental Protection Agency, the Fish and Wildlife Service, and the National Marine Fisheries Service to integrate the project's environmental program. These agencies played an active role in the planning and designing of the project.

Now that construction is underway, representatives from these agencies make semi-annual visits to review progress and provide recommendations on how the work can better comply with project environmental guidelines. As a result of past



*Palau gets as much as 150 inches of rain a year, making soil compaction, a key element of road building, difficult. —Photo by Lt. Col. Ronald Light.*

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